

## **REMARKS**

The Office Action dated March 28, 2007 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1, 4, 5, 8-9, 11-13 and 15-36 have been amended to more particularly point out and distinctly claim the subject matter of the invention. Claims 37-44 have been added. No new matter has been added. Claims 1-44 are submitted for consideration.

Claims 16-26 were rejected under 35 U.S.C. 101 on the grounds that the claimed invention lacks patentable utility. Claims 16-24 have been amended to overcome the rejection of claims 16-26. Therefore, Applicant request that the rejection be withdrawn.

Claims 1-5, 8-14 and 16-36 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Publication No. 2003/0128705 to Yi (hereinafter Yi). The rejection is traversed as being based on a reference that does not teach or suggest each of the elements of claims 1-5, 8-14 and 16-36, and newly added claims 37-44.

Claim 1, upon which claims 2, 3, 6, 7 depend, recites a communication method in a radio system. The method includes associating each data unit of a logical channel with a logical channel-sequence number in a medium access control entity of a transmitter.

Claim 11 recites a communication method in a radio system. The method includes receiving, in the network infrastructure, data units of at least one logical channel, each data unit sent within one transmission time interval being associated with one logical channel-specific sequence number in the user terminal. The method also includes

arranging the data units of each logical channel in a network element of the network infrastructure.

Claim 16, upon which claims 17-18 and 20 depend, recites a computer program product of a radio system. The computer program product being embodied on a computer readable medium and including program code for controlling a processor to execute a method including associating each data unit of a logical channel with a logical channel-specific sequence number in a medium access control entity of a transmitter.

Claim 24 recites a computer program product of a radio system. The computer program product being embodied on a computer readable medium and including program code for controlling a processor to execute a method including arranging data units of each logical channel, in a network element of the network infrastructure, in order of the sequence numbers, each data unit of a logical channel being associated with a logical channel-specific sequence number in a medium access control entity of a transmitter.

Claim 25 recites a network element of a radio system. The network element is a part of the network infrastructure. The network element is configured to receive data units of at least one logical channel from a user terminal, each data unit of a logical channel sent being associated with a logical channel-specific sequence number in a medium access control entity of a user terminal. The network element is configured to arrange the data units of each logical channel in order according to the sequence numbers associated with the data units.

Claim 27 recites a radio network controller of a radio system. The radio network controller is configured to receive data units of at least one logical channel from a user terminal, each data unit of a logical channel sent within one transmission time interval being associated with a logical channel-specific sequence number in the user terminal and to arrange the data units of each logical channel in order according to the sequence numbers associated with the data units.

Claim 28 recites a user terminal of a radio system including a network infrastructure. A user terminal is configured to associate each data unit of a logical channel with a logical channel-specific sequence number in a medium access control entity.

Claim 31 recites a radio system including a transmitter and a medium access control entity in the transmitter. The medium access control entity is configured to associate each data unit of a logical channel with a logical channel-specific sequence number.

Claim 32, upon which claim 33 depends, recites a radio system including a network infrastructure and at least one user terminal communicating with the network infrastructure over an air interface. A user terminal is configured to associate each data unit of a logical channel to be sent within one transmission time interval with one logical channel-specific sequence number. The network infrastructure is configured to receive the data units of at least one logical channel associated with sequence numbers. The

network infrastructure is configured to arrange the data units of each logical channel in order of the sequence numbers.

Claim 34 recites an apparatus configured to associate each data unit of a logical channel with a logical channel-specific sequence number in a medium access control entity.

Claim 35 recites an apparatus configured to associate each data unit of a logical channel to be sent within one transmission time interval with one logical channel-specific sequence number.

Claim 36, upon which claims 4-5, 8-10 and 12-15 depend, recites a communication including associating each data unit of a logical channel to be sent within one transmission time interval with one logical channel-specific sequence number in a transmitter.

As outlined below, Yi does not teach or suggest each of the elements of the pending claims.

Yi discloses a that method for preventing a stall condition in a terminal of a mobile communications system uses a timer to limit how long data blocks are stored in a reordering buffer. The method includes receiving a data block over a wireless link, determining whether a preceding data block has not been received, storing the received data block in the reordering buffer if a preceding data block has not been received, and then outputting the received block from the buffer when the timer expires. Whether or not a preceding data block is missing is determined based on a comparison of transmission

sequence numbers. In other steps of the method, succeeding data blocks are output from the buffer based on expiration of a second timer period. The periods of the timer are advantageously controlled to prevent a wraparound of transmission sequence numbers with respect to data blocks stored in the buffer. If desired, the data blocks may include MAC-hs protocol data units.

Applicant submits that Yi does not teach or suggest each of the elements of the pending claims. Each of the pending claims, in part, recites a data unit of a logical channel. Yi does not teach or suggest these features.

Yi does not number data units of one logical channel but numbers data units of multiple logical channels. Figure 6 of Yi shows sequential numbering of data blocks (180) which are not from one logical channel only. Hence, the way of numbering of Yi differs essentially from that of the presently pending claims. This is clear, for example, from Figure 4 of Yi where logical channels (DTCH and DCCH) are shown above MAC-d entity and before passing to MAC-hs, the logical channels go through the "multiplexing" function. Thus, in MAC-hs, a sequence number is given per transmission time interval but it is not given per logical channel but per MAC-d flow, which may contain several logical channels. Based on the distinctions noted above, Applicant request that rejection under 35 U.S.C. 102(e) should be withdrawn because Yi does not teach or suggest each of the elements of claims 1-5, 8-14 and 16-44.

Claims 6 and 7 were rejected under 35 U.S.C. 103(a) as being unpatentable over Yi in view of U.S. Patent Publication No. 2004,0228313 to Cheng (hereinafter Cheng).

According to the Office Action Yi teaches all of the elements of claims 6 and 7 except for teaching mapping of the data to improve uplink transmission. Therefore, the Office Action combined the teaching of Yi and Cheng in an effort to yield all of the elements of claims 6 and 7. The rejection is traversed as being based on references that do not teach or suggest each of the elements of claims 6 and 7.

Cheng discloses a that method of mapping data for uplink transmission in a communication system maps data to a transport channel for uplink transmission in accordance with a selected transmission mode for uplink transmission. In the method, a transmission parameter may be extracted from a received signaling message, and a transmission mode for uplink transmission selected based on the extracted transmission parameter. The data, which may be high data rate uplink data, may be mapped from logical channels in a MAC layer to transport channels in a physical layer for transmission on the uplink. The transmission on the uplink may be performed from one of an autonomous transmission mode and a scheduled transmission mode, and the transmission parameter may be at least one of a priority indication parameter related to class priority of a service class of data to be transmitted on the uplink, and a radio channel condition.

Cheng does not cure the deficiencies of Yi as noted above. Specifically, Cheng does not teach or suggest a data unit of a logical channel, as recited in claim 1, upon which claims 6 and 7 depend. Therefore, Applicant respectfully asserts that the rejection under 35 U.S.C. §103(a) should be withdrawn because neither Yi nor Cheng, whether

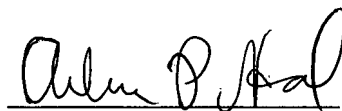
taken singly or combined, teaches or suggests each feature of claim 1 and hence, dependent claims 6 and 7 thereon.

As noted previously, claims 1-44 recite subject matter which is neither disclosed nor suggested in the prior art references cited in the Office Action. It is therefore respectfully requested that all of claims 1-44 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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Enclosures: Petition for Extension of Time  
Additional Claim Fee Transmittal  
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